

# Sidebands

The Newsletter of the EAST GREENBUSH AMATEUR RADIO ASSOCIATION



www.egara.club

September 2017

President - Tom Scorsone, KC2FCP  
Secretary - Steve VanSickle, WB2HPR

Vice-President - Ridge Macdonald, KB2HWL  
Treasurer & Newsletter Editor - Bryan Jackson, W2RBJ

## W2EGB Scores Over 700 Contacts During Field Day EGARA Operates Two Stations and Racks Up 2,488 Points

Field Day 2017 was a huge success this year, with more than two dozen EGARA members staffing the event for its 24-hour run. A total of 719 contacts were recorded, beating last year's performance by a wide margin. In addition, the club scored 1,050 points for fulfilling a number of bonus categories, including visits by public officials and for receiving media coverage. The total points scored during Field Day by EGARA totaled 2,488. For 2016, the point total was 1,316.

"This was our strongest Field Day in recent memory," said EGARA President Tom Scorsone, KC2FCP. "Not only did we operate with two stations this year, members were able to provide 24 hour operating coverage. I want to again express my sincere appreciation to everyone who participated."

Field Day preparations began Friday evening with the staging of equipment and construction of antennas. Saturday morning, club members installed a multi-band fan-dipole for 80 and 40 meters, and a large beam antenna to work 20, 15 and 10 meters. The club's two Yaesu 450D transceivers were pulled from storage and set up to run on 12 volt power using massive batteries deigned to backup cell phone sites during electrical outages.

(continued on page two)



Nick Field, KD2JCR, kept the contacts coming as he worked the overnight shift during Field Day weekend.

### Field Day Quick Stats

Total Contacts: 719  
Total Bonus Points: 1,050  
Total ARRL Point Score: 2,488

## Rensselaer County Sheriff Recognizes EGARA

Rensselaer County Sheriff Patrick Russo has presented the East Greenbush Amateur Radio Association with a *Certificate of Appreciation*, citing the club's "dedication, training and preparedness to provide assistance to the Rensselaer County Sheriff's Office during emergency operations."

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The certificate was accepted on the club's behalf by Treasurer Bryan Jackson, W2RBJ.

Sheriff Russo visited the club's Field Day operations to observe its emergency communication capabilities first-hand.



EGARA Treasurer Bryan Jackson accepts the *Certificate of Appreciation* from Rensselaer County Sheriff Patrick Russo

Next EGARA Club Meeting September 13, 2017 at 7 pm. See you there!

## A Field Day to Remember

Using only battery power during the Field Day weekend earned the club an additional 200 bonus points. Total bonus points gained by EGARA during the entire event included:

| Description                                    | Points       |
|------------------------------------------------|--------------|
| • 100% Emergency power                         | 200          |
| • Media Publicity                              | 100          |
| • Public Location                              | 100          |
| • Public Information Table                     | 100          |
| • Site Visit by invited elected official       | 100          |
| • Site Visit by invited served agency official | 100          |
| • Submitted via the Web                        | 50           |
| • Educational activity                         | 100          |
| • Social media                                 | 100          |
| • Safety officer                               | 100          |
| <b>Total Bonus Points</b>                      | <b>1,050</b> |

Because all of the club's 719 contacts were made using battery power, each was worth two points for a total of 1,438. When combined with the bonus points, EGARA claimed a total score of **2,488** points.

EGARA's Field Day activities stepped off Saturday afternoon on June 24th at precisely 2 pm EDT and continued for the next 24 hours. The first contact was KG8MR in Ohio on the 20 meter band. As Field Day wore on, W2EGB logged QSO's all across the nation, as well as in Canada and Puerto Rico. The last contact was with WE3F in eastern Pennsylvania.

This year's Field Day event also garnered media attention, with the Troy Record and both WNYT NewsChannel 13 and WRGB NewsCenter 6 covering the club's operations. The stories were featured prominently on both of the station's newscasts at 6 pm and 11 pm, with club Treasurer Bryan Jackson, W2RBJ, being interviewed on the importance of amateur radio during emergencies when regular communication systems fail.

In addition, the club's Field Day operations were visited by Rensselaer County Sheriff Patrick Russo and two members of the East Greenbush Police Department, Sgt. Ernest Tubbs and Officer Ed Witko. Their presence helped the club earn an additional 200 bonus points as well.

A photo gallery of 2017 Field Day activities is on page 6 of this issue of Sidebands. More photos and links to the TV news coverage of the club's activities can be found on the website at: [www.EGARA.club](http://www.EGARA.club).

### EGARA's Field Day Crew

This year's Field Day was a success thanks to the many EGARA members and friends who turned out to help. Their participation not only made for a quick and easy set up, but allowed for the club to operate for 24 hours with two stations. Tear down and clean up also went remarkable fast, taking under an hour to complete. Here's the list of those who made FD '17 one to remember:

- Tom Scorsone, KC2FCP
- Steve VanSickle, WB2HPR
- Ridge Macdonald, KB2HWL
- Andrew Sullivan, KC2WWJ
- Dave Williams, N2VLQ
- Peggy E Donnelly, KD2LMU
- Bryan Jackson, W2RBJ
- Peter Mattice, KD2JKV
- Christopher Linck, N2NEH
- Russ Greenman, WB2LXC
- Dave Gillette, KC2RPU
- Nick Field, KD2JCR
- Walt Snyder, N2WJR
- Jim Pendolino, KC2HRO
- Frank Simon, WB2PUH
- Gina Pendolino, KC2QJC
- Jim Arnold, KB2HRM
- Phil Quandt, KB2WVO
- Mike Sisno, KD2NST
- Tim Antonacci, WA2WDX

### Total Contacts by Band and Mode:

| Band         | CW       | Phone      | Dig      | Total      | %          |
|--------------|----------|------------|----------|------------|------------|
| ----         | --       | -----      | ---      | -----      | ---        |
| 80           | 0        | 137        | 0        | 137        | 19         |
| 40           | 0        | 292        | 0        | 292        | 41         |
| 20           | 0        | 198        | 0        | 198        | 28         |
| 15           | 0        | 28         | 0        | 28         | 4          |
| 10           | 0        | 64         | 0        | 64         | 9          |
|              | --       | -----      | ---      | -----      | ---        |
| <b>Total</b> | <b>0</b> | <b>719</b> | <b>0</b> | <b>719</b> | <b>100</b> |



## Run for Liza

EGARA Provides Support for 5K Race  
Against Domestic Violence



A dozen EGARA volunteers turned out to provide communications support for the tenth annual "Run for Liza" which was held June 11th at the Goff Middle School in East Greenbush. The team set up the club's portable 444.700 mhz repeater to communicate over the entire 5K race route. Pictured above: Members of the team prepare the portable mast for the repeater.

## A New Tool for Club Presentations EGARA Invests in an LCD Projector

They say a picture is worth a thousand words, and with that in mind the club has purchased a new Epson VS240 projector that will be available to enhance club presentations.



A variety of inputs  
allows for easy connection to  
laptops and media devices

The unit features three LCDs which display SVGA resolution of 800 x 600, at 3000 lumens of color brightness and 3000 lumens of white brightness, allowing it to be used in a lighted room while projecting a large easy-to-see picture.

It also features a variety of inputs, allowing it to project images from a laptop, DVD player or even video from a USB thumb drive. The inputs include HDMI, the standard in digital connectivity, for compatibility with the latest laptops and media players.

The projector is designed to make club presentations more interesting by allowing videos, photographs, and other media assets to be incorporated into various visual aids, such as PowerPoints.

Its first workout came at the June meeting with an overview of the software used for Field Day. Another presentation is set for September by Bill Leue, K2WML, who will offer a PowerPoint on a project in which he built standoffs to mount a 6-meter dipole wire antenna on the side of his house.

Club members who wish to make a presentation should contact EGARA Vice President Ridge Macdonald to reserve time at an upcoming meeting and to coordinate set up of the audio/visual equipment that is needed.

## Stay Up To Date at [www.EGARA.club](http://www.EGARA.club)

You don't have to wait for the next issue of *Sidebands* to stay informed about club news and events. Just point your Internet browser to the club's website to catch up on the latest developments. You'll also find a calendar of upcoming meetings and events, as well as helpful links to other interesting amateur radio websites. Plus, you can check out gear for sale by club members and list any equipment you're looking to buy or sell -- all for free! An archive of past newsletters is also available for downloading. It's all at:

[www.egara.club](http://www.egara.club)!

## EchoLink Back Up on 147.330 Repeater



The EchoLink / IRLP has been restored to service on the 147.330 mhz repeater

after being off during the summer due to a water infiltration problem where it was housed. The issue was addressed by moving it to a temporary location.

Repeater administrator John Maddalla, WB2HTZ, notes that the squelch tail is rather short to accommodate the IRLP. To determine if you can hear it, just DTMF 1 1 .. ID and instructions will play. He reminds users to please press "73" after using the EchoLink feature.

## EGARA June Meeting Minutes

The June meeting of the EGARA was called to order at 7:17 PM by President Tom Scorsone, KC2FCP. The minutes of the previous meeting were not read – they are available in Sidebands, the EGARA Newsletter.

- The Treasurers report was presented by Bryan Jackson, W2RBJ. He said that the Hamfest was a financial success, and attendance met expectations. He demonstrated the new projector purchased with the proceeds of the Hamfest. The demonstration showed the proper way to log contacts during Field Day with the N3FJP software.
- Tom Scorsone circulated sign up sheets for the various Field Day activities. He discussed plans to run 2A again this year, using at least one beam and dipoles for lower frequencies. He announced that food and beverages would also be provided.
- Bryan pointed out that the main purpose of Field Day would be to allow members the chance to operate on HF who wish to sharpen their operating skills and to work together as a team to set up the stations and utilize the club's equipment.
- A Field Day operating manual was also made available for those who may need more information regarding rules and regulations. Tony Pazzola, W2BEJ, suggested that we take pictures to document our field day activities to validate extra points for submission.
- Bryan asked that members please submit suggestions for content in the Sidebands newsletter. Chris Linck mentioned that during his recent trip to Europe that several of our DX members remarked that they enjoyed reading the newsletter.
- Tom mentioned that his picture was to be posted in the East Greenbush library – as a member of the East Greenbush volunteer community.
- Refreshments were on hand for all in attendance, including two varieties of gourmet pizza from Mercato's and beverages. The meeting was adjourned at 8:12 PM.

--de Steve VanSickle WB2HPR / Secretary

## Ham It Up



Love at first sight



## 2017 Field Day Photo Gallery



EGARA President Tom Scorsone and Vice President Ridge Macdonald kick-off Field Day on Saturday afternoon.



The crew assembles the fan dipole for use on the 40 and 80 meters bands

EGARA Secretary Steve VanSickle checks one of the batteries used to power the W2EGB radios during the 24 hours of Field Day



Rensselaer County Sheriff Pat Russo (right) chats with EGARA members during a visit to the club's Field Day operations at the East Greenbush Masonic Temple.



The W2EGB team logs contacts during HF operations on the 80 and 40 meter station.



Members of the EGARA Field Day team prepare to log another contact



Sgt. Ernest Tubbs of the East Greenbush Police Department tries his hand at operating W2EGB during his visit to the club's Field Day site.

2017 Field Day operations wrap up with the dismantling of the club's beam antenna which was used on the 10, 15 and 20 meter bands.



# TO BALUN OR NOT TO BALUN?

By Ralph Bilal, WD0EJA

That is a question many have had. Why consider a balun? What is it? Where do you install it? What does it do? And whoever made up the word had quite an imagination. It comes from "balanced" to "unbalanced". So, why consider a balun?

Most radios have 50 ohm impedance outputs. Coax is normally close to 50 ohms. No problem so far. However, sometimes the antenna has a mind of its own and may not be 50 ohms, but 300 or 400 ohms. This is the case with certain loops. Therefore, you make a transformer at the antenna to solve the mis-match.

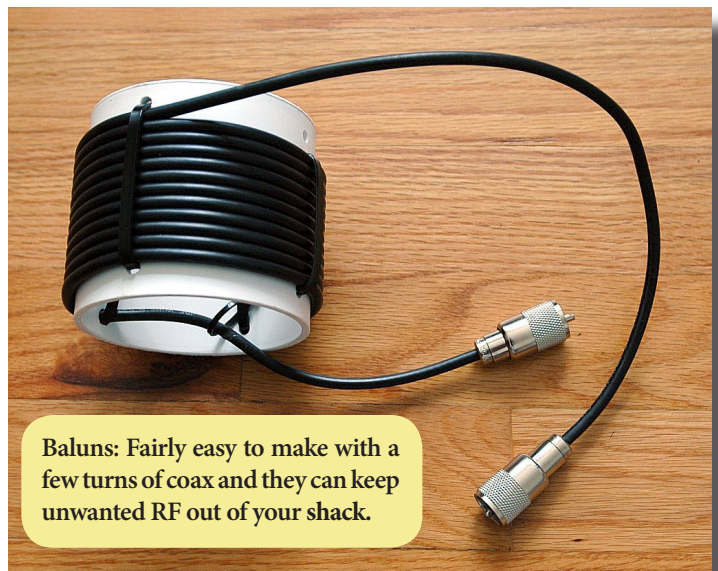
Some choose to use a ladder line rather than coax. Then the balun or transformer is at the transmitter end, usually through a tuner. The ladder lines range from 200 ohms to 600 ohms. This will feed a high impedance loop antenna. It can also feed a low impedance dipole by feeding it differently using a "DELTA" connection. This is where the dipole is one solid wire. The ladder line is connected at a point to the left of center and to the right of center. At the point where the impedance of the dipole matches the ladder line impedance.

Most installations are, radio, 50 ohm coax then 50 to 70 ohm antenna. Why use a balun?

It is due to the nature of RF on wire. "Skin Affect". RF traveling along a wire appears on the surface of the wire. Sort of like floating along. Coax has a center conductor with RF floating on the outside surface of the wire. The other side is the shield. The RF is floating along the inside of the conductive shield. This is perfect for good cancellation allowing the coax not to radiate until it gets to the antenna.

However, sometimes when it gets to the antenna, the skin affect makes a problem. Instead of going to the shield side of the antenna, it takes advantage of the skin affect and goes down the outside of the shield of the coax. Then it says howdy to you while your operating, giving you a little RF burn when you touch your equipment. Or, causing havoc in the station -- coming through speakers not even turned on, light up light bulbs, activating alarm systems and the list goes on. The amount of RF coming back on the shield depends much on the length of coax. Normally it is a fraction of the total power. What can you do? Install a balun.

You can either construct or purchase a 1:1 balun. Some are called isolation transformers. This puts a high reactance component between the shield side of the antenna and the shield of the coax. There are a variety of ways to do this.



Baluns: Fairly easy to make with a few turns of coax and they can keep unwanted RF out of your shack.

Coiling the coax is an easy way to do it. There are toroid configurations and there are ferrite beads. Most of these will work well. However, caution is needed with the toroids and ferrite beads. It needs to be large enough to handle the RF power of the transmitter. The coil of coax is quite effective. Listed below are some suggestions on coil size per frequencies.

## RG/8, 58, 59, 8X, 213 Coiled on 5 3/8" Diameter Form

3.5-30 MHz = 10 FT, 7 TURNS,

3.5-10 MHz = 18 FT, 9-10 TURNS

14-30 MHz = 8 FT, 6-7 TURNS

Wind the indicated length of coaxial feed line into a coil (like an inductance coil) and secure so it holds its form. The balun is most effective when the coil is near the antenna.

So, to balun or not to balun? You'll know when you fire up your radio.



## On the Beam

### News & Notes

### The “Felony” Question Returns on FCC Form 605

After going missing for several years, the FCC has reinstated the “felony” question on form 605 which is filled out when applying for a new amateur radio or commercial license. The question -- which asks if the applicant has ever been convicted of a federal or state felony -- last appeared nearly 20 years ago when it was left off the form during a revision because of a restructuring of license classes.



Federal  
Communications  
Commission

#### Basic Qualification Question:

Has the Applicant or any party to this application, or any party directly or indirectly controlling the Applicant, ever been convicted of a felony by any state or federal court? ☐ YES ☐ NO

If “YES”, see “FCC BASIC QUALIFICATION QUESTION INSTRUCTIONS AND PROCEDURES” on the back of this form.

The change requires all applicants to answer the question as part of the Commission’s legal responsibility to evaluate whether an applicant is qualified to be issued any FCC license (both commercial and amateur). The change also applies to NCVEC 605 Form which is used at exam sessions. Applicants that fail to answer the question will not be allowed to take license exams.

If the answer to the felony question is ‘YES’, the applicant must submit a statement to the FCC explaining the circumstances. They will still be allowed to take the exam, but their application will be held for a basic qualification review, which FCC already does for other radio license services. The FCC says that the fact that an applicant answers ‘YES’ doesn’t automatically mean they will be denied a license.

However, there are some exceptions to having to answer the felony question. Applicants are exempt if they are using the form for any of the following purposes: New, Amendment, Modification (Upgrade or call sign change), or Renewal/Modification (changes at renewal time). The question also does not have to be answered if the applicant is doing a license renewal or updating their license information for such things as a change of address, name, email, etc.

### Last Local Radio Shack Store Pulls the Plug

Wednesday, June 28th marked the closing of Radio Shack’s East Greenbush store, the electronic chain’s last retail location in the Capital District. The store was slated to remain open until October, but the landlord found a tenant who wished to take over the space immediately. The closing marked the end of a ready supply of components, connectors, fuses and cables for many local hams.

At one time, Radio Shack had over 1,700 stores in operation, including more than a dozen in the Capital District. The company struggled for years, but was never able to figure out how to effectively compete with the growing presence of online retailers.



Employees load remaining inventory and fixtures into a truck parked in front of the East Greenbush store

According to the East Greenbush store’s manager, all remaining inventory from the East Greenbush store was transferred to the company’s retail location in Hudson. That store is slated to continue liquidating merchandise until October, when it too will be closed.



# EGARA Sets Sail for Annual Summer Cruise

Members of the EGARAs crew set out for their annual Hudson trip on a beautiful Saturday, August 19th. Here's a gallery of photos from a great day aboard *The Spirit of Albany*.



Tony Pazzola takes in the view from the bridge as Dave Williams handles the helm



Peter Mattice, Steve Van Sickle and Bill Leue check out the shoreline sights.



The Dutch Apple passes by the USS Slater off our port bow



The Albany Skyline on a picture perfect day



Russ Greenman captures a pix (above) as Peggy Donnelly enjoys the view from a front row seat (left)



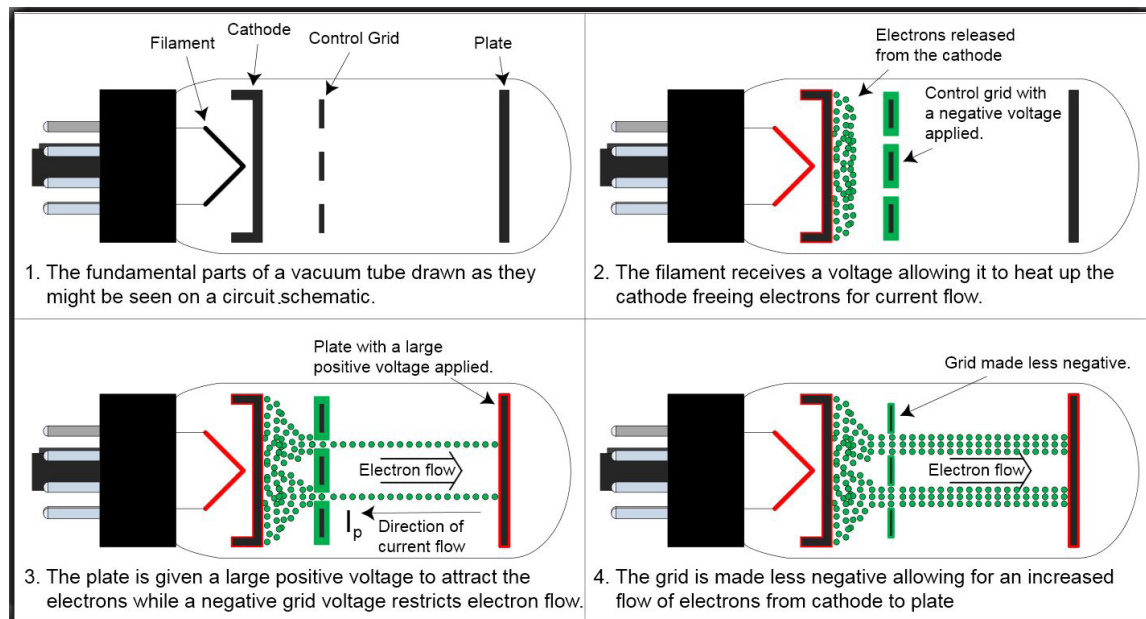
Dave Gillette, whose grandfather was the lookout on the Titanic, upholds his family's tradition of looking the other way



# Tube Matching DeMystified

Most amateur radio power amplifiers use tubes. They're generally inexpensive, reliable, and offer years of proven service. Take the venerable 811A that's used in many of today's RF power amps -- it's been around since the 1930s!

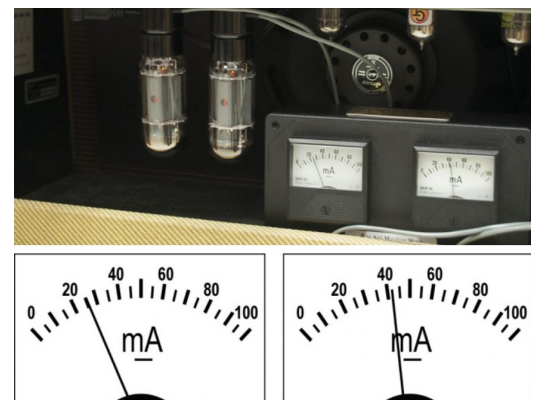
Many hams prefer power tubes that are electrically matched. This is so each tube will have the same amount of "idle" plate current and amplification characteristics when plugged into an amplifier. This is done so the tubes can work together in your amp giving you optimal output quality and tube longevity. Matched tubes also receive extra quality checks to reduce the possibility of getting a faulty power tube that may have slipped by the manufacturer. Let's look at some of the basics of how tubes work to have a better understanding of the benefits of using matched tubes versus unmatched power tubes in an amp.



As seen in the diagram above, the tube's cathode is its source of electrons. The filament is used to provide the heat necessary to release electrons from the cathode. Since electrons have a negative charge, the plate is given a positive voltage to attract them. The control grid is placed between the cathode and plate and is given a negative voltage to repel electrons and restrict their flow to the plate. If the grid is made more negative, the number of electrons passing through the grid is reduced. If the grid is made less negative, the number of electrons passing through the grid increases. The flow of electrons from cathode to plate when measured at the plate is called the "plate current."

Matching comes into play because tubes vary in the amount of plate current flowing through them when given the same control grid and plate voltages. Adjusting the amount of negative control grid voltage for an optimal amount of idle plate current is referred to as "setting the bias." For instance, in a sound amplifier with a fixed bias, the negative grid voltage is set by adjusting a bias pot. If the bias pot is set too cold, the sound will be lacking in warmth. If the bias pot is set too hot, the tube will be overheating and the sound can be lacking in definition. Setting the bias involves finding a bias point where the amp sounds the best and the tubes are not overheating. As seen in the picture, the tube on the left has an idle plate current measurement of about 25 mA, while the tube on the right has about 42 mA. Why does this difference in idle plate current matter?

6L6GC tubes in that amp sound great when biased for about 35 mA of plate current, but with unmatched tubes, you can't get both tubes biased at that sweet spot. The tube with more plate current will be dissipating more power and getting hotter than the tube with less plate current. This means the tube on the right will wear out quicker than the tube on the left, leading to an earlier loss of clarity and definition. In an RF power amplifier, unmatched tubes will also be operating at different efficiencies, sacrificing both power output and tube life. Matched tubes can be more expensive to buy, but may cost less in the long run by providing longer life.



# CALENDAR

**September 13, 2017** - EGARA membership meeting, 7 pm, East Greenbush Masonic Temple, 710 Columbia Turnpike, East Greenbush, NY, 7 pm.

**October 7, 2017** - EGARA VE Exam Session - 10 am, East Greenbush Community Library. Walk-in accepted, but RSVPs appreciated. Contact Tom at: KC2FCP@nycap.rr.com.

**October 11, 2017** - EGARA Mini Hamfest - 7 pm, East Greenbush Masonic Temple.

**May 12, 2018** - EGARA Hamfest 2018 - 8 am to 1 pm at the East Greenbush Fire Department.

## Pro Tip: Check Your Soldering Iron -- Lead-Free Solder Shortens Tip Life

Sooner or later the soldering tip is worn out by the soldering operations. This means that the iron layer which protects the copper core material is used up. The unprotected copper disappears very fast because of the extreme high migration rate and corrosion rate of copper -- and the newer lead-free solders exasorbates this problem.

The change from lead containing solder alloy to lead-free has a significant influence on the durability of soldering tips in manual soldering operations. The higher percentage of tin and the higher melting temperature of the lead free solder act more aggressively on the soldering tip and accelerates the reduction of the tip life.

In addition, lead-free solders typically use a more aggressive flux formulation.

The wearing process can be divided into three effects:

- Corrosion caused by fluxes
- Migration of the iron plating into the tin solder
- Mechanical stress caused by abrasive cleaning or "aggressive" soldering.

A soldering tip is a wearing part (much like tires on a car) and a worn out tip is not a defect.



## For Sale

- **Force 12 Stealth Vertical Antenna** - Covers 80-10 meters. Can be used as a flag pole for stealth. No radials needed. Aircraft grade aluminum. Paid \$350, sell \$200.. Pick up in Rensselaer, NY. Contact Bryan at: W2RBJ@outlook.com.
- **Yaesu Model VX-8GR** - **Price Reduction!** HT dual band 2M/70M, with GPS, case & extra battery \$225.00. Contact Bob Stark at: bob.claudias@gmail.com
- **Mosley TA-33** - New & never used, factory carton is damaged but antenna is 100% complete and perfect, w/ all parts and hardware, paperwork -- \$375 picked up in Troy, NY. Also available, **TA-33jr**, used 30 days, like new complete, and partially assembled for \$300.
- **Antenna Rotor** -- Used 30 days, w/ 100 ft cable w/plugs, and control box, beautiful shape, \$425 picked up. Contact: Steve Van Sickle, WB2HPR, by phone at 326-0902.

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**Looking to Buy, Sell or Swap?**  
 Send your info to W2RBJ@outlook.com

## The East Greenbush Amateur Radio Association

Organized in 1998, by Bert Bruins, N2FPJ, (Silent Key) and Chris Linck, N2NEH, the East Greenbush Amateur Radio Association, an ARRL affiliate, is committed to providing emergency services, educational programs, and operating resources to the amateur radio operators and residents of the Capital Region of New York State. The club station is W2EGB. The club also has several VHF and UHF repeaters open to club members and the public.